PEASE DEVELOPMENT AUTHORITY

DIVISION OF PORTS & HARBORS

ANNUAL DREDGE REPORT

2008

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Figure 1.

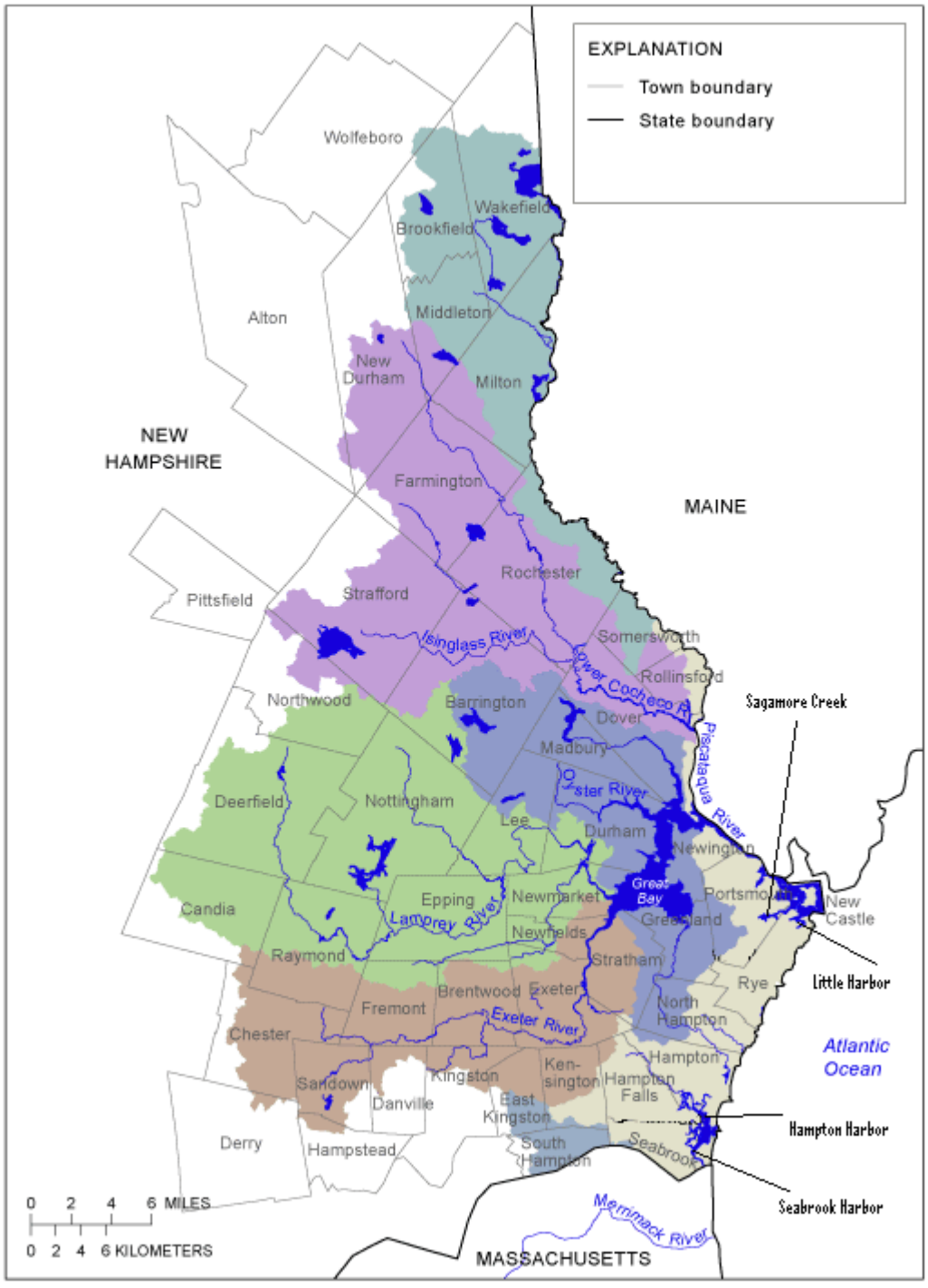

Figure 1 - Overview

PISCATAQUA RIVER

The Piscataqua River Federal Channel dates back to 1879 and the currently authorized dimensions were completed in 1966 by the Army Corps of Engineers (ACOE). Its entire length of 6.2 nautical miles has a controlling depth of 35 feet and is 400 feet wide, expanding to 700 feet at sharp turning points. The channel begins at Clarks Island in Portsmouth Harbor, across the channel from New Castle, and terminates at the Atlantic Terminal in Newington, at navigation buoys 12 and 13. Two turning basins were included in the 1966 Federal project: one 850 feet wide opposite the Atlantic Terminal, and the second 950 feet wide just north of the Public Service of New Hampshire (PSNH) power plant. Currently the Portsmouth Pilots report that they are turning 800 foot ships in the 850 foot turning basin. The width of this basin poses significant safety concerns and limits the existing and future use of the terminals. The ACOE, working with the Division has conducted a Cost to Benefit Study of expanding the turning basin to 1,000 feet. The study was favorable for the ACOE to proceed with the project. The second phase of the project was a Feasibility Study for Engineering and Design. The estimated cost of the Feasibility Study is $750,000.00, and the sponsor (the Division) share estimate is $375,000.00, which was authorized by the Capital Budget Overview Committee in April of 2006. Project design and construction is estimated to cost approximately $10,000,000 (35% state / 65% federal). In March of 2008 the ACOE received $148,000 from the State to proceed with the project. The project will involve the removal of about 600,000 cubic yards of material of which only about 25,000 cubic yards are ledge, considerably less ledge than was anticipated.

A third turning basin 1,000 feet wide was added in 1989 opposite the PDA-DPH Market Street Marine Terminal and the Granite State Mineral Terminal between the Memorial Bridge and the Sarah Long Bridge.

The channel opposite Henderson Point at navigation buoy 9, off Goat Island was dredged in 1992 when the ACOE removed 51,139 cubic yards to improve the water depth and expand the width of the channel at this hazardous turn.

Simplex Reach, located north of the PSNH power plant, has historically required dredging approximately every 7 years due to reoccurring shoaling. This area was last dredged in 2000/2001 after a 9 year lapse. The shoaling at that time had reached such dangerous levels that the Portsmouth Pilots had been forced to restrict the allowable draft of vessels navigating that area. Although the overall project cost was $461,061.00, the only cost to the State of New Hampshire was the $50.00 Wetlands Bureau application fee. This area is due to be dredged again and is on the agenda for consideration when Federal funding becomes available. The ACOE has suggested that the longer period between dredges may be due to advanced maintenance dredging in 2001, and are considering doing the same again if funding is available.

Previous disposal sites have been both outside of and within the river, with no discernible effect on subsequent dredge quantities. The National Marine Fisheries Service (NMFS),

US Fish and Wildlife Service (USFWS), and the New Hampshire Fish & Game (NHFG) have taken the position that in-river disposal is acceptable for the next dredge project if certain conditions are met, such as advanced maintenance dredging and no dredging in November. NMFS and USFWS also encouraged the ACOE to seek out alternative disposal sites for future projects. It is important to note that this would require additional funding as the ACOE will perform the dredge in the most economical and expeditious manner possible (which they believe to be in-river disposal), and anything done beyond that is at the expense of the sponsor.

FORT POINT

Fort Point is the area in the Piscataqua River adjacent to Fort Constitution and the U.S. Coast Guard Station in New Castle, NH. The area has never been dredged. In the past safety concerns have been expressed by the Portsmouth Pilots and many ships' captains.

In 1995 these concerns were passed on to the ACOE by the New Hampshire Port Authority and a complete Navigational Improvement Study and Reconnaissance Report was requested. In May 1996 the ACOE responded that the area was outside the Federal Project and could not be dredged under their maintenance program, and funding was not available for the initiation of new investigations at that time. While the ACOE has indicated as recently as 2000 that should monies become available then they would investigate the possibility of improvement, this is not anticipated.

In 2004 the US Coast Guard received approval from the Department of Environmental Services (DES) Wetlands Bureau to dredge approximately 11,500 cubic yards of accumulated sediment from the area of their boathouse and pier in order to improve navigation for their vessels. The project was completed in the spring of 2007. There was no expenditure to the State for this project.

LITTLE HARBOR

Little Harbor is situated on the southern side of Great Island (New Castle) and the northern side of Rye near Odiorne Point State Park. The harbor is protected from the Atlantic Ocean by a 550 foot long north breakwater and a 900 foot long south breakwater. The 3,000 foot long entrance channel is 100 feet wide. The original specifications by the ACOE for the channel and the entire anchorage called for a 12' depth. The harbor extends from the breakwaters to the Route 1B Bridge near the Wentworth by the Sea Hotel.

The original dredging project began in 1894 and was completed in 1903. Little Harbor is designated by the Federal government as a "Harbor of Safe Refuge" and is the responsibility of the ACOE to maintain. Since 1903 there have been 4 dredging projects. In 1985 the Wentworth By The Sea Corporation removed 160,610 cubic yards for the construction of their marina. In 1987 an additional 16,000 cubic yards were removed from Witch Creek, which empties into Little Harbor on the southwestern side. In 1993 the ACOE and the NH Port Authority were involved in an emergency dredge project to provide access to the public landing in front of Wentworth Marina.

During the dredge window of 2000/2001 there were 37,000 cubic yards of material dredged from Little Harbor and deposited offshore near Wallis Sands State Park in order to provide a source of beach nourishment. The project was intended to maintain the channel depth at a minimum of 10 feet and the anchorage area at 6 feet to 8 feet. The cost of the project to the ACOE was $735,000.00. The Port Authority expended $40,000.00 for the removal, storage and replacement of moorings.

The 2000/2001 project had an environmental impact upon 7.3 acres of eelgrass in the harbor. The University of New Hampshire was contracted by the ACOE to develop a mitigation plan for the eelgrass and to monitor the results of that plan. This monitoring process is ongoing.

This office has consistently maintained the need to maintain Little Harbor to the original project depth of 12 feet throughout. While the Port Authority did agree to the reduced dredge depth in 2000/2001 the Division intends to request increased depth when the need next arises for maintenance. A recently completed survey by the ACOE confirmed that shoaling is present, and the ACOE recently conducted an eelgrass study in conjunction with the preparation of an Environmental Assessment for future maintenance dredge work.

BACK CHANNEL/SAGAMORE CREEK

The back channel is approximately 3 to 5 feet deep, 75 to 100 feet wide and is 2 nautical miles long. It extends from the Route 1B bridge on the westerly end of Little Harbor (near the Wentworth by the Sea Hotel) to the intersection with Sagamore Creek near Blunts Island, continues northwesterly past Leaches Island and terminates at the Piscataqua River by the Route 1B bridge between Shapleigh Island and Goat Island.

Sagamore Creek branches off from the Back Channel near Blunts Island and runs southwesterly to the Sagamore Avenue Bridge on Route 1A in Portsmouth. The ACOE considers both of these channels to be included in the Sagamore Creek Federal project.

In 1964 and 1968 Mike's Marina dredged approximately 400 cubic yards from the area of the Marina. In 1971 the ACOE removed 30,000 cubic yards from the creek.

Condition surveys conducted by the ACOE since 2002 have illustrated shoaling in several areas of the creek. Although there is currently no funding available for the ACOE to dredge the area, they are proceeding with benthic sampling in the proposed near-shore disposal area located off Wallis Sands Beach and with state and federal agency coordination so as to be prepared should funding become available.

COCHECO RIVER

The Cocheco River is approximately 2.65 nautical miles long and runs from the intersection of the Piscataqua River and the Salmon Falls River to the Washington Street Bridge in downtown Dover. The last dredge of the Cocheco was in 1895. The authorized channel is 60 to 75 feet wide and 7 feet deep. The City of Dover has been revitalizing the waterfront area of their downtown and as part of the project was very interested in having the Cocheco River dredged. The river had depths as shallow as 4.7 to 0.3 feet at the northern end of the channel. High levels of contamination were found in the dredge materials. The City of Dover built a containment system at the site of their old landfill and the material was trucked to that location. In accordance with state statute, this office is identified in the Wetlands Bureau permit as the applicant for the project, however there has been no expenditure by the State.

The City of Dover was able to enlist the aid of the congressional delegation and obtain funding for the Cocheco dredge which the ACOE began during the 2004/2005 dredge window. Because of the amount of ledge found during the project the ACOE was unable to complete the dredge in the 2004/2005 dredge season. The ACOE requested that the controlling depth be reduced to 6 feet for the purpose of this project and this office agreed, which allowed the project to proceed. Additional funding was obtained for the 2005/2006 dredge season and additional work was done. For a variety of reasons, including the ice conditions and continued problems with ledge, the project was not completed. Funding has not been available to complete the project. The ACOE has reimbursed the City of Dover for placing the dredge spoils into the containment area which left them without sufficient funds to continue dredging. The ACOE and the City met with staff members of the NH Congressional Delegation to discuss the future of the project. It was decided at that meeting to keep the disposal facility open one more season in the hopes that the Congressional Delegation could appropriate funds for the Federal Government's Fiscal Year 2010. If funds are not appropriated for FY 2010, then the city would proceed with closure of the disposal facility and the no more dredging of the Cocheco River federal navigation project would be planned.

OYSTER RIVER

The Oyster River runs from downtown Durham near Route 108 easterly into Little Bay. This is not a Federal project and is the sole responsibility of the State to maintain.

There have been several requests from the University of New Hampshire and from residents along the Oyster River to dredge the channel. As a result a committee was formed and a study, funded through the Clean Water Act Section 319, was conducted. The cost was $29,200 and was paid for through a grant issued by the Department of Environmental Services to the Town of Durham. The Oyster River Feasibility Study for Re-establishing a Navigation Channel dated November 30, 2004 recommended dredging the Oyster River navigation channel to a depth of 4 feet with an average width of 38 feet. The report indicates that this project would improve safe navigation and would also improve dilution of the treated wastewater from the Durham treatment system. In February 2006, at the request of the NH Dredge Management Task Force (DMTF), a representative from the Oyster River Task Group presented an overview of the project to the DMTF. A number of DMTF members, including the ACOE, NMFS, NHFG and the DES Wetlands Bureau provided preliminary comments on the proposal. Currently funding is not available to proceed with this project.

HAMPTON/SEABROOK HARBOR

Hampton and Seabrook Harbors support a commercial fishing fleet, charter fishing and whale watch boats, an amphibious "duck" tour boat as well as numerous recreational craft. This office provides a commercial fishing facility in Hampton as well as a recreational facility complete with a public launch ramp. The Town of Seabrook provides a public pier and a launch ramp used by both commercial and recreational boats. Yankee Commercial Fisherman's Cooperative is located on a Seabrook town facility which was formerly owned by PSNH and was built during construction of Seabrook Station. Hampton/Seabrook Harbors are accessed from the seaward through a common entrance channel.

A 1965 Memorandum of Understanding between the State of New Hampshire and the ACOE set the responsibility for maintenance of the harbors and the entrance channel. The ACOE maintains the entrance channel from the Route 1A Bridge seaward. That channel is approximately 0.7 miles long, 150 feet wide with a controlling depth of 8 feet. The State of New Hampshire is responsible for the approximately 22 acres of anchorage and access channels inside of the Route 1A Bridge. The ACOE has conducted a Feasibility Study to determine whether there is enough use of the harbors to economically justify their agency assuming responsibility once again for the entire project. The study is currently under internal review, but was considered to favor the ACOE taking over the inner harbor. Completion of the feasibility study cost $167,000, with a State share of $18,600. The next step in the process will be "Plans and Specs" which will cost $170,000 of which the State will be responsible for $20,000.

Located on the south side of the entrance channel, seaward of the Route 1A Bridge is a structure known as the half tide jetty. The jetty is adjacent to the community of Sun Valley. The area landward of the half tide jetty is a dredge spoil disposal site that was also designed to act as shoreline stabilization. However, the tidal flow prevents the material from remaining behind the jetty. 1.7 million dollars was appropriated in 1998 to address the jetty and the erosion problems at Sun Valley. The ACOE informed the State that before permits for any alterations or additional construction would be issued, a hydrodynamic model and study must be done of the Hampton/Seabrook tidal estuary system. $400,000 was appropriated in FY2000 to allow the State to contract with UNH to conduct such a study and develop the hydrodynamic model. This hydro model was used in developing the "227 Project" referenced below.

River Street runs along the southern end of Seabrook Harbor. The Blackwater River runs from Salisbury, Massachusetts and empties into Seabrook Harbor. The last portion of the Blackwater River has meandered for many years across the tidal clam flats called Middle Ground. Middle Ground abuts River Street. In recent years the Blackwater River had meandered very far to the southward and was undercutting the properties along River Street, creating the so-called "River Street cut". Several emergency projects were accomplished with appropriations in 1998, 1999, and 2000 to attempt to stabilize the shoreline along River Street. Additionally, the material was being deposited in Seabrook

and Hampton Harbors necessitating dredging on a nearly annual basis in order to keep the harbors open and useable. In 2004/2005 the ACOE performed a "227 Project" which was an experimental project to attempt stabilization of the Blackwater River and Middle Ground as well as River Street by closing the River Street cut. Two double walls of vinyl sheet pile were constructed at each end of the cut. The Blackwater River was then dredged in an effort to remove the damming material which was then placed between the two double walls, filling the cut.

Immediately upon completion of the 227 Project Hampton and Seabrook Harbors were dredged using $1,000,000.00 authorized by the Capital Budget Overview Committee for that purpose. 110,699 cubic yards of clean sand were removed and used on Hampton and Seabrook beaches as beach nourishment. The result of all this work is still being evaluated. Initial results seem to indicate that a 5 year dredge cycle will once again be enough to keep the harbor open. Sand is again building up enough that planning for the next dredge has begun.

RYE HARBOR

Rye Harbor is a man-made harbor and is a Federal project maintained by the ACOE. It is bordered at the seaward limit by two breakwaters, one to the north and one to the south, each approximately 530 feet long and constructed in 1939. The Harbor is used extensively by local and transient recreational boaters, as well as commercial fishing and charter boats. The Federal Channel is 2,300 feet long, 100 feet wide and is 10 feet deep at the entrance of the harbor and 8 feet deep for the remainder. The anchorage area to the north is maintained at 6 feet and the anchorage area to the south is maintained at 8 feet. Rye Harbor does not require frequent dredging and has had very little done since its creation. Reports from the Rye Harbormaster, local fishermen, and recreational boaters indicate that there is some shoaling, particularly in the inner harbor at the outlet for the Aucomin Marsh. The ACOE confirmed this in a recent survey but do not feel that it is necessary to plan yet for dredging.

DISPOSAL SITES

The ACOE) maintains a number of New Hampshire's tidal waters to ensure safe navigation. While some of the material dredged from these waters is suitable for beach nourishment and/or in-river or near-shore disposal, the majority is not. For those dredged materials that are clean but not suitable for beach nourishment or in-river or near-shore disposal, there are only two practicable methods of disposal: onshore and offshore. Currently, New Hampshire does not have a designated onshore disposal site, and its primary offshore disposal location, the Cape Arundel disposal site, is scheduled to close in January 2010. Unless cost-effective and environmentally acceptable onshore and offshore disposal sites are identified by January 2010, there will be no place to accommodate much of New Hampshire's future clean dredge material disposal needs.

To address its future dredged material disposal needs, the state of New Hampshire is developing a Regional Dredge Material Management Plan (DMMP). The DMMP is comprised of two components: a Comprehensive Upland Dredge Material Disposal Study (Upland Disposal Study) and an Ocean Disposal Site Designation Study (Ocean Disposal Study). Unfortunately no Federal funding has yet been identified for this effort. (Unfortunately no Federal funding has yet been identified for this effort).

The Upland Disposal Study involves continuation of a reconnaissance level study completed by the ACOE in 2005 that identified and provided first-tier screening of 100 potential sites (in New Hampshire) for upland disposal of dredged material. $250,000 for the study was appropriated by Congress in the 2004 Energy and Water Development Appropriations Act. The reconnaissance level study was completed using approximately $91,000 of the $250,000 appropriation. The unexpended portion of the appropriation, $159,000, was reprogrammed to other ACOE projects with the expectation that it would be restored when needed. However, due to restrictions on the ACOE's ability to restore reprogrammed funds, the remaining $159,000 of appropriated funds has not been restored. The ACOE estimates that $159,000 is needed to initiate the feasibility phase of the study, which would shortlist the 100 potential upland disposal sites based on property owners' interests, proximity to dredging sites, cost of land and verification of compliance with zoning, and constructability of disposal sites.

The Ocean Disposal Study involves identifying and formally designating a new ocean disposal site. The Cape Arundel dredge material disposal site (CADS), located near Cape Arundel in York County, Maine, has been the primary ocean site for the placement of clean dredged material from the rivers and harbors of New Hampshire and southern Maine for over three decades. CADS has never been formally designated for use in accordance with the Marine Protection Research and Sanctuaries Act (MPRSA) of 1972, and use of the site will cease in January 2010. Due to its impending closure and its relatively small remaining capacity, CADS is not a practicable option for meeting New Hampshire's future offshore dredge material disposal needs. The first step toward meeting these needs is to initiate the process of identifying and designating a new ocean disposal site. Pursuant to EPA policy, an environmental impact statement (EIS) must be

prepared to identify and designate offshore disposal sites. An EIS would need to look at the sources of dredged material in the region over at least a 20 year horizon, the quality of material, alternatives for disposal or use, and alternative ocean disposal sites. The ACOE estimates that scoping for the EIS will cost approximately $100,000. The Maine State Planning Office and New Hampshire Coastal Program are expected to be the study sponsors, and both States have written to their respective Congressional delegations requesting support and Federal funding. Cost sharing requirements for this study have not been determined but recent similar projects, Long Island Sound and Rhode Island Sound, were conducted at full Federal expense. Each of those projects cost several million dollars.

SUMMARY

The Division of Ports and Harbors works closely with the Department of Environmental Services Wetlands Bureau, the Dredge Management Task Force (DMTF), and the other agencies with concerns and responsibilities in dredging.

Previously, the need for a comprehensive long-range dredge management plan was identified. The Division and the Wetlands Bureau have been working together to create and maintain such a plan in order to streamline the lengthy permitting process, address environmental issues in advance, and ensure the timely maintenance of the navigable waters of the State of New Hampshire. This process allows State and Federal resource agencies, working through the DMTF, to identify issues and respond without delaying the projects. It also allows for long-range permitting and prudent fiscal planning.